

a microwave cavity in communication with the microwave sources to receive the microwaves; and

a particulate filter having two ends disposed in the cavity which is heated by the microwaves in the cavity, the particulate filter coated with a microwave absorbing material for the particulate filter to be uniformly heated by the microwaves, the particulate filter positioned in relation to the microwave sources to receive microwaves at the two ends for the particulate filter to be uniformly heated by the microwaves from each of the two ends from the microwave sources.

14. A regeneration system comprising:

at least one microwave source for producing microwaves;

a microwave cavity having a plurality of ports through which microwaves from the microwave source enter the cavity; and

a particulate filter having two ends disposed in the cavity which is heated by the microwaves, the particulate filter coated with a microwave absorbing material for the particulate filter to be uniformly heated by the microwaves, the particulate filter positioned in

relation to the microwave sources to receive microwaves at the two ends for the particulate filter to be uniformly heated by the microwaves from each of the two ends from the microwave sources.

15. A method for regenerating a particulate filter comprising the steps of:

passing exhaust through the particulate filter; and

heating the particulate filter coated with a microwave absorbing material from its two ends with microwaves so the filter is uniformly heated by the microwaves from each of the two ends.